

CLAIMS:

1. A seal structure of a fuel cell, said fuel cell including an MEA, a separator, a gas passage formed in said separator, a gas manifold formed in said separator, a connecting gas passage formed in said separator and between said gas passage and said gas manifold, a coolant passage formed in said separator, a coolant manifold formed in said separator, a connecting coolant passage formed in said separator and between said coolant passage and said coolant manifold, and a seal for preventing gas and/or coolant from leaking and defining a continuous seal line, said seal structure of a fuel cell comprising an interrupted back-up disposed at at least one of said connecting gas passage and said connecting coolant passage, said back-up located on one side of said separator and a portion of seal line located on the other side of said separator being disposed such that said back-up and said portion of said seal line are overlapped with each other in a fuel cell stacking direction.

2. A seal structure of a fuel cell according to claim 1, wherein said back-up is disposed at said connecting gas passage between said gas passage and said gas manifold.

3. A seal structure of a fuel cell according to claim 1, wherein said back-up is disposed at said connecting coolant passage between said coolant passage and said coolant manifold.

4. A seal structure of a fuel cell according to any one of claims 1 - 3, wherein said back-up is formed in said seal.

5. A seal structure of a fuel cell according to any one of claims 1 - 3, wherein said back-up is formed in said separator.

6. A seal structure of a fuel cell according to claim 1, wherein though said gas manifold and said coolant manifold differs in width to each other, said interrupted back-up and a portion of said seal line positioned in an extension of said interrupted back-up are disposed on a same straight line.

7. A seal structure of a fuel cell according to claim 1, wherein said seal is made from adhesive and said back-up is made in said seal and includes a plurality of non-coated portions of adhesive which are spaced from each other in a back-up extending direction.

8. A seal structure of a fuel cell according to claim 1, wherein said seal is made from a rubber gasket and said back-up is formed in said seal and includes a plurality of gasket material removed portions which are spaced from each other in a back-up extending direction.

9. A seal structure of a fuel cell according to claim 1, wherein said back-up is formed in either one of said seal and said separator and includes a rib having a convex and concave structure.

10. A seal structure of a fuel cell according to claim 1, wherein said back-up is formed in either one of said seal and said separator and includes a plurality of protrusions spaced from each other.

11. A seal structure of a fuel cell according to claim 1, wherein said back-up is formed in either one of said seal and said separator and includes a rib having a plurality of tunnels formed in said rib and spaced from each other.

12. A seal structure of a fuel cell according to claim 5, wherein an entire portion of said back-up located between adjacent separators is formed in either one separator of the adjacent separators.

13. A seal structure of a fuel cell according to claim 5, wherein a portion of said back-up located between adjacent separators is formed in one separator of the adjacent separators, and a remaining portion of said back-up located between adjacent separators is formed in the other separator of the adjacent separators.